WHAT IS CLAIMED IS:

1. A process for preparing a compound of Formula I:

5 or a pharmaceutically acceptable salt or stereoisomer thereof, wherein

R is H, unsubstituted or substituted C₁-C₁₀ alkyl or unsubstituted or substituted aryl;

 R^1 is $-C(=O)NR^3H$;

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 R^2 is

- 1) H,
- 2) OH,
- 3) OC₁-C₆ alkyl,
- 4) C₁-C₆ alkyl, or
 - 5) halo; and

R³ is C₁-C₆ alkyl;

- which comprises the steps of:
 - a) preparing a slurry of a compound of Formula II

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(where R is defined above), a compound of Formula III

(where X is a halo and R^2 is defined above) and a base in a solvent;

b) adding a palladium catalyst and a bisphosphine ligand to the slurry to produce a coupling product of Formula IV

$$\begin{array}{c|c}
 & H \\
 & N \\
 & N \\
 & R^2 \\
 & IV
\end{array}$$

c) adding a piperazine-urea of Formula V

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to the coupling product of Formula IV; and

- d) completing a reductive amination to produce the compound of Formula I.
- 2. The process according to Claim 1 comprising the steps of:

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a) preparing a slurry of a compound of Formula II

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(where R is defined above), a compound of Formula III

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(where X is a halo and R^2 is defined above) and a phosphate in a solvent;

b) adding Pd₂(dba)₃ and Xantphos to the slurry to produce a coupling product of Formula IV

c) adding a piperazine-urea of Formula V

to the coupling product of Formula IV; and

- d) completing a reductive amination to produce the compound of Formula I.
- 3. The process according to Claim 1 which comprises the steps of:
- a) preparing a slurry of a compound of Formula II

(where R is defined above), a compound of Formula III

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(where X is a halo and R^2 is defined above) and a carbonate in a solvent;

b) adding Pd2(dba)3 and Xantphos to the slurry to produce a coupling product of Formula IV

c) adding a piperazine-urea of Formula V

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to the coupling product of Formula IV; and

d) completing a reductive amination to produce the compound of Formula I.

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- 4. A process for preparing 4-[2-(5-cyano-thiazol-2-ylamino)-pyridin-4-ylmethyl]-piperazine-1-carboxylic acid methylamide which comprises the steps of:
 - a) preparing a slurry of 2-chloro-4-formylpyridine, 2aminothiazole and K₃PO₄ in toluene;
 - b) adding Pd₂(dba)₃ and Xantphos to the slurry to produce a coupling product;
 - c) adding N-methylaminocarbonylpiperazine in DMAc to the coupling product; and
 - d) completing a reductive amination by adding Et₃N, acetic acid and NaBH(OAc)₃ to produce 4-[2-(5-cyano-thiazol-2-ylamino)-pyridin-4-ylmethyl]-piperazine-1-carboxylic acid methylamide.
- 5. The process according to Claim 4 which further comprises the step of adding Pd₂(dba)₃ and Xantphos to the slurry and heating to a temperature of about 60°C to about 100°C to produce a coupling product.
 - 6. A process for preparing a compound of Formula I

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or a pharmaceutically acceptable salt or stereoisomer thereof, wherein

R is H, unsubstituted or substituted C₁-C₁₀ alkyl or unsubstituted or substituted aryl;

25 R^1 is $-C(=O)NR^3H$;

R² is

- 1) H,
- 2) OH,

- 3) OC₁-C₆ alkyl,
- 4) C₁-C₆ alkyl, or
- 5) halo; and

5 R^3 is C_1 - C_6 alkyl;

which comprises the steps of:

a) preparing a slurry of a compound of Formula II

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(where R is defined above), a compound of Formula III

$$Z \longrightarrow X$$
 R^2

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(where Z is CN or CO_2H ; X is a halo and R^2 is defined above) and a base in a solvent;

b) adding a palladium catalyst and a bisphosphine ligand to the slurry to produce a coupling product of Formula IV

$$\begin{array}{c|c}
 & H \\
 & N \\
 & N \\
 & R^2 \\
 & IV
\end{array}$$

- c) reducing the coupling product of Formula IV;
- d) adding a piperazine-urea of Formula V

to the coupling product of Formula IV; and

e) completing a reductive amination to produce the compound of Formula I.

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7. A process for preparing a compound of Formula I

or a pharmaceutically acceptable salt or stereoisomer thereof, wherein

10 R is H, unsubstituted or substituted C₁-C₁₀ alkyl or unsubstituted or substituted aryl;

 R^1 is $-C(=O)NR^3H$;

R² is

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- 1) H,
- 2) OH,
- 3) OC₁-C₆ alkyl,
- 4) C_1 - C_6 alkyl, or
- 5) halo; and

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 R^3 is C_1 - C_6 alkyl;

which comprises the steps of:

a) preparing a slurry of a compound of Formula II

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(where R is defined above), a compound of Formula III

$$Me \bigvee_{N} X$$

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(where X is a halo and R² is defined above) and a base in a solvent;

b) adding a palladium catalyst and a bisphosphine ligand to the slurry to produce a coupling product of Formula IV

$$\begin{array}{c|c}
H \\
N \\
N \\
S \\
CN
\end{array}$$

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- halogenating the coupling product of Formula IV; c)
- adding a piperazine-urea of Formula V d)

to the coupling product of Formula IV; and

e) completing a reductive amination to produce the compound of Formula I.

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8. A process for preparing a compound of Formula I

$$R^{1-N}$$
 N
 R_{2}
 CN
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or a pharmaceutically acceptable salt or stereoisomer thereof, wherein

5 R is H, unsubstituted or substituted C1-C10 alkyl or unsubstituted or substituted aryl;

 R^1 is $-C(=O)NR^3H$;

R² is

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- 1) H,
- 2) OH,
- 3) OC₁-C₆ alkyl,
- 4) C₁-C₆ alkyl, or
- 5) halo; and

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 R^3 is C_1 - C_6 alkyl;

which comprises the steps of:

a) preparing a slurry of a compound of Formula II

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(where R is defined above), a compound of Formula III

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(where X is a halo and, R and R^2 are defined above) and a base in a solvent;

b) adding a palladium catalyst and a bisphosphine ligand to the slurry to produce a coupling product of Formula IV

c) adding a piperazine-urea of Formula V

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to the coupling product of Formula IV; and

- d) completing a reductive amination to produce the compound of Formula I.
- 9. A process for preparing Xantphos comprising the steps of:

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- a) adding MTBE, 9,9-dimethylxanthene and TMEDA to produce a solution;
- b) adding s-BuLi to the solution to produce a mixture;
- c) slowly adding Ph₂PCl to produce a resulting mixture;
- d) aging the resulting mixture and adding more Ph₂PCl; and

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e) filtering to isolate Xantphos.